

REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars.

1. Rejection of claims 1-3 and 5-7 under 35 U.S.C. § 103(a) as being unpatentable over U.S. publication no. US 2003/0132281 (*Jones et al.*) in view of Japanese publication no. 2001-157044 (*Murata et al.*)

Reconsideration of this rejection is respectfully requested on the basis that the rejection fails to establish a *prima facie* case of obviousness with respect to claims 1 and 6. The remaining claims depend from claim 1 or 6, and are therefore patentable as containing all of the recited steps of claim 1 or elements of claim 6, as well as for their respective recited features.

Turning to the *Jones* publication, it is respectfully submitted that the *Jones* publication does not disclose the use of comparative data derived from authentic bank notes and known forgeries and the use of additional comparative data relating to new types of forgeries in order to check processed bank notes to determine whether a forged bank note is present, as required by claims 1 and 6, as previously discussed in the Appeal Brief dated December 9, 2009 and the response filed June 10, 2010.

In particular, the *Jones* publication only teaches the use of comparative data derived from authentic bank notes and from *known* forgeries in order to detect counterfeit bank notes. As can be seen, the *Jones* publication discloses updating a database with serial numbers associated with bills determined to be counterfeit when compared against existing comparative data derived from authentic bank notes and from *known* forgeries (paragraphs [0093], [0142], [0143], [0148], [0182]-[0187]). Thus, these updated serial numbers are only associated with forgeries or counterfeit documents that are recognized based upon the *known* comparative data derived from authentic documents and known forgeries, and cannot be considered to be additional comparative data for *new* types of

forgeries, which are not recognized based upon the *existing* comparative data derived from authentic bank notes and known forgeries, as is required by pending claims 1 and 6.

Thus, it can be seen that the *Jones* publication simply fails to disclose the use of additional comparative data derived from new types of forgeries, which are not recognized based upon the comparative data derived from authentic banknotes and known forgeries, as is required by both claim 1 and claim 6.

The system according to the *Jones* publication is thus similar to the types of systems discussed in the Background of the pending application wherein new forgeries are not recognized and are thus erroneously judged as an authentic bank note (specification at [0002]-[0004]). In other words, the system according to the *Jones* publication is simply incapable of recognizing new types of forgeries.

This deficiency of the *Jones* publication is acknowledged in the Office action on page 4 (“Jones fails to specifically teach “[sic] provide the comparative data derived from authentic bank notes and known forgeries and the additional comparative data for new types of forgeries that may have arisen after the comparative data derived from authentic bank notes and known forgeries was established.”)

The Office action on page 4 turns to the *Murata* publication in an attempt to cure the deficiencies of the *Jones* publication. However, it is respectfully submitted that the *Murata* publication does not provide for the shortcomings of the *Jones* publication, for the reasons discussed below.

For convenience, a copy of a machine translation of the *Murata* publication is attached in Appendix A, and all references refer to the machine translation of the *Murata* publication, unless otherwise noted.

The *Murata* publication relates to the concept that it is desirable to prevent color copiers or facsimile machines from creating duplicate images of authentic documents (bank notes and securities) that are in existence when the copier or facsimile machine is manufactured, as well as authentic documents that are newly issued after the copier or

facsimile machine is manufactured (Derwent-ACC-No: 2001-448475, abstract; paragraphs [0001], [0004], [0009], [0014], [0020], [0021], [0029], [0031]).

In particular, the copier of the *Murata* publication has ROM (fixed characteristics storages parts store 5) that stores information relating to authentic bills/securities that are in existence when the copier is manufactured (paragraph [0014]).

The copier of the *Murata* publication also has a registration mode, in which information regarding newly issued authentic bills/securities can be registered in the copier and stored in the registration characteristic storage section 4 (paragraphs [0020], [0024]).

Further, the copier of the *Murata* publication has a “usual copy” mode, in which a document to be copied is scanned, the scanned image is compared against the data in the fixed characteristics storages parts store 5 and the registration characteristic storage section 4 in order to judge whether the document to be copied is the same as an authentic bill that was circulating when the copier was manufactured or whether the document to be copied is the same as an authentic bill that was issued after the copier was manufactured, and registered in the copier (paragraphs [0021], and [0026] through [0028]).

If a document to be copied is determined to be the same as an existing authentic bill or subsequently registered authentic bill, than the copier will consider the situation to be a “coincidence” and will print the copy with some portion of the object image affected so as to not produce an exact copy (paragraphs [0027], [0028]). If the document to be copied is not determined to be the same as an existing authentic bill or subsequently registered authentic bill, than the copier will print a copy of the document to be copied (paragraph [0028]).

Thus, while the copier of the *Murata* publication compares a document to be copied against information relating to existing authentic bills in circulation when the copier is manufactured, and against information relating to newly issued authentic bills

that have been subsequently registered in the copier, all of the information that is retained in the copier relates to *authentic* bills, and does not relate to information on new types of *forgeries*.

Thus, similar to the *Jones* publication, the *Murata* publication also fails to disclose the use of comparative data derived from authentic bank notes and known forgeries and the use of additional comparative data relating to new types of forgeries in order to check processed bank notes to determine whether a forged bank note is present, as required by claims 1 and 6.

Therefore, even if the teachings of the *Murata* publication, which relate to a copier/facsimile device, were utilized to modify the document processing system of the *Jones* publication, it is respectfully submitted that the proposed combination of the *Jones* and *Murata* publications would still fail to disclose the use of comparative data derived from authentic bank notes and known forgeries and the use of additional comparative data relating to new types of forgeries in order to check processed bank notes to determine whether a forged bank note is present, as required by claims 1 and 6.

Accordingly, since the proposed combination of the *Jones* and *Murata* publications fails to disclose all of the features required by pending claims 1 and 6 a *prima facie* case of obviousness cannot be established with respect to claims 1 and 6, and withdrawal of this rejection is respectfully requested.

Claims 2-3, 5, and 7 are allowable for all the reasons given above concerning base claim 1 or 6, and further in view of their specific recitations. Accordingly, since the proposed combination of the references fails to disclose all of the features required by pending claims 1 and 6, a *prima facie* case of obviousness cannot be established with respect to claims 1 or 6, from which claims 2-3, 5, and 7 respectively depend. Therefore, withdrawal of this rejection is respectfully requested.

2. Rejection of claim 4 under 35 U.S.C. § 103(a) as being unpatentable over U.S. publication no. US 2003/0132281 (*Jones et al*) in view of Japanese publication no. 2001-157044 (*Murata et al.*) and further in view of European publication no. EP 1 255 232 (*Pernot et al.*)

Reconsideration of this rejection is respectfully requested on the basis that the rejection fails to establish a *prima facie* case of obviousness with respect to claim 1, from which claim 4 depends, on the basis that the *Pernot* patent fails to provide for the deficiencies of the *Jones* and *Murata* publications as discussed above in detail with respect to claim 1.

Accordingly, withdrawal of this rejection is respectfully requested.

3. Conclusion

In view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that every pending claim in the present application be allowed and the application be passed to issue.

Please charge any additional fees required or credit any overpayments in connection with this paper to Deposit Account No. 02-0200.

If any issues remain that may be resolved by a telephone or facsimile communication with the applicants' attorney, the examiner is invited to contact the undersigned at the numbers shown below.

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- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to the image forming device which reads an object image and forms the picture in the paper, and relates to the image forming device which has a forged prohibition function applied also to the bill with which a new issue was made especially.

[0002]

[Description of the Prior Art]In recent years, the incident which forges a bill and negotiable securities using a color copying machine (a facsimile machine is included) has occurred, and it has become a social problem. In order to prevent such an incident, the color copying machine is expected to have a forged prohibition function. Even if this forged prohibition function tends to copy the specific picture to which the copy was forbidden, a copying machine recognizes automatically, and cannot copy and it carries out. As image recognition art for realizing a forged prohibition function, the image data of the specific picture is memorized beforehand, for example, and there are some which compare the image data of the object image read at the time of a copy with pattern matching. In order to solve the hugeness of the amount of stored data which is a fault of pattern matching, the method of extracting the feature of a picture from image data is also considered. For example, the density histogram according to color is extracted about the whole image data, and there are some which compare resemblance with the pattern of the histogram of an object image and the pattern of the histogram of a specific image. Since inclination of a picture stops influencing in the comparison using the density histogram according to color, the fault of pattern matching is compensated also with this point.

[0003]

[Problem(s) to be Solved by the Invention]By the way, in order to judge that the above

mentioned pattern matching or not only the density histogram according to color but the read object image is a specific image, the color copying machine must hold the data (image data, characteristic quantity, etc.) of a specific image. Conventionally, the data of the specific image is written in ROM etc. fixed. Since the data of this new bill is not written in ROM if a bill is published newly, a copy will become possible. A huge labor is needed when updating ROM on the occasion of issue of a new bill.

[0004]Then, the purpose of this invention is to provide the image forming device which has a forged prohibition function which solves an aforementioned problem and is applied also to the bill with which a new issue was made.

[0005]

[Means for Solving the Problem]To achieve the above objects, this invention is characterized by that an image forming device provided with a reading section which reads an object image as data, and an image formation part which forms a picture in the paper from image data comprises the following.

A feature extraction part which extracts the feature of a picture from read image data.

A registration characteristic storage section which registers the feature extracted from image data which read a specific object image.

A prohibition part which forbids image formation according to this comparison result as compared with the feature of a specific object image that the feature of an object image is registered.

[0006]A specific object image may be read and it may have the feature register mode which registers the extracted feature, and the usual mode management in comparison with the feature of a specific object image that the feature which read an object image and was extracted is registered.

[0007]The feature of a specific object image may be provided with a fixed-characteristics storage parts store currently fixed beforehand, and formation of a duplicate image may be forbidden according to this comparison result as compared with the feature of a specific object image that the feature of an object image is fixed.

[0008]

[Embodiment of the Invention]Hereafter, one embodiment of this invention is explained in full detail based on an accompanying drawing.

[0009]As shown in drawing 1, this invention is characterized by an image forming device comprising the following.

The reading section 1 which reads an object image as data.

The image formation part 2 which forms a picture in the paper from image data.

The feature extraction part 3 which extracts the feature of a picture from the read image data.

The registration characteristic storage section 4 which registers the feature of the whole picture extracted from the image data which read the specific object image, The fixed-characteristics storage parts store 5 to which fixed storage of the feature of a specific object image is carried out beforehand, The reading characteristic storage section 6 which memorizes the feature of the whole object image read for the purpose of the copy, The image processing portion 7 which changes the image data of an object image into the image data for image formation, CPU10 which controls the prohibition part 9 which forbids image formation according to this comparison result, and each part as compared with the feature of the image memory 8 which

stores the image data for those image formation, and the specific object image which is having the feature of an object image registered.

[0010]The reading section 1 is a scanner which makes it run a line image sensor to the manuscript laid on the glass plate for example. The form of making it running a manuscript to the stationary image sensor may be sufficient. A scanner reads three kinds of concentration signals, R (red), G (green), and B (blue), in an object image, and digitizes them.

[0011]Although the image formation part 2 is an ink-jet printer to which vertical scanning of the ink nozzle is carried out to the paper it runs, for example, as long as it can form a color picture, it may not be an ink-jet printer. An ink-jet printer carries out injection control of the ink nozzle of each color according to four kinds of signals, Y (yellow), M (magenta), C (cyanogen), and K (black), stored in the image memory.

[0012]Although the feature extraction part 3 extracts the density histogram according to color of R, G, and B as a quantity which shows the color feature of a picture, for example, the characteristic quantity may not be a density histogram according to color. The density histogram according to color calculates the number of a pixel at given concentration about all the pixels which constitute image data.

[0013]The registration characteristic storage section 4 consists of nonvolatile memory, such as a flash memory.

[0014]The fixed-characteristics storage parts store 5 consists of ROMs (read only memory). The feature of all the bills which are circulating when manufacturing an image forming device is written in ROM.

[0015]The reading characteristic storage section 6 consists of RAM (random access memory).

[0016]The image processing portion 7 mainly changes RGB information into YMCK information. In addition, distortion removal of shading, edge enhancement, etc. are performed.

[0017]The image memory 8 stores the image data for image formation, i.e., the data for printing based on YMCK information.

[0018]Although the prohibition part 9 forbids the image formation part 2 from forming a picture from the image data of the image memory 8, it processes image data so that a color tone may differ from the object image which a picture was not recorded in the paper at all, and it did not make, but was read. For example, the picture smeared away black is formed. or even when the shape of a picture is the same, it is made for color tones to differ clearly by carrying out printing prohibition only of Isshiki out of YMCK information, and printing only the remaining colors YMCK information may be processed so that a picture may carry out color reversal and may be printed.

[0019]Data flow is explained using drawing 2.

[0020]The image data based on the RGB information read by the reading section 1 is sent to the feature extraction part 3 and the image processing portion 7. In the feature extraction part 3, the density histogram according to color is extracted from image data. The extracted feature is registered into the registration characteristic storage section 4 at the time of registration. The extracted feature is memorized by the reading characteristic storage section 6 when performing the usual copy.

[0021]When performing the usual copy, it compares with the feature memorized to the reading characteristic storage section 6 about all of the features memorized by the fixed-characteristics storage parts store 5 and the features registered into the registration characteristic storage section

4. That is [when the feature is in agreement as a result of comparison, / the object image which it is going to copy is a specific object image], it is judged that they are the bill which is circulating from before manufacture of an image forming device, and the bill with which a new issue was made after manufacture.

[0022]On the other hand, in the image processing portion 7, image data is changed into YMCK information from RGB information, and this image data (print data) is stored in the image memory 8. If the object image which it is going to copy is not a specific object image, the image data of this image memory 8 will be sent to the image formation part 2 as it is. However, the object image which it is going to copy is forbidden from printing **** and a duplication prohibition picture in the state as it is with a specific object image.

[0023]Next, the flow of the processing at the time of registration is explained.

[0024]As shown in drawing 3, an operator chooses register mode from a navigational panel, and an image forming device investigates whether register mode is chosen. It is normal operation if register mode is not chosen. At the time of register mode, an operator sets to a reading section the bill with which a new issue was made, for example, and operates an image input start. An image forming device reads and extracts the feature of the whole picture from the read image data. An image forming device registers the extracted feature into the registration characteristic storage section 4. Here, two or more fields shall be provided into an original image, it shall divide for every field, and the feature shall be extracted. Therefore, after feature extraction finishes about one field, if it investigates whether feature extraction finished and has finished about no fields, feature extraction is started about the next field. After extraction of the feature of the whole picture finishes, the feature is memorized to the registration characteristic storage section 4.

[0025]Next, the flow of the processing at the time of normal operation is explained.

[0026]As shown in drawing 4, in the normal operation which copies, an operator sets a manuscript to a reading section and operates an image input start. An image forming device reads and extracts the feature of the whole picture from the read image data. An image forming device memorizes the extracted feature to the reading characteristic storage section 6.

[0027]The feature for every field of the reading characteristic storage section 6 is compared with the feature about one specific object image of the registration characteristic storage section 4, and it is investigated whether it is an identical image. If it is an identical image, it will shift to the printing job in coincidence by considering a decision result as "coincidence." If it is not an identical image, comparison will be repeated about another specific object image of the registration characteristic storage section 4. If it ends without the check to the registration characteristic storage section 4 being in agreement also at once, it will shift to the check to the fixed-characteristics storage parts store 5.

[0028]The feature of the whole picture beforehand extracted like the time of registration is memorized fixed about various kinds of specific object images by the fixed-characteristics storage parts store 5. Then, like the check to the registration characteristic storage section 4, the feature about one specific object image is compared, and it is investigated whether it is an identical image. If it is an identical image, it will shift to the printing job in coincidence by considering a decision result as "coincidence." If it is not an identical image, comparison will be repeated about another specific object image of the fixed-characteristics storage parts store 5. If it ends without the check to the fixed-characteristics storage parts store 5 being in agreement also at once, a decision result will be made into "disagreement" and it will shift to the usual printing

job. A picture as read is printed in the usual printing job. However, in a printing job in case a decision result is "coincidence", the picture (for example, picture smeared away black) which carried out the prohibition process of the duplicate image formation is printed. Therefore, if the manuscript which the copy of faithful color was created and was set if the manuscript which the operator set was a manuscript unrelated to a bill is a bill, the picture which carried out the prohibition process of the formation of a duplicate image will be printed.

[0029]Although the case where a specific object image was a bill was explained, the feature can be registered not only about a bill but about a stock certificate and negotiable securities. When a new issue is made in a stock certificate and negotiable securities or a denomination design is changed, it is good to register.

[0030]

[Effect of the Invention]This invention demonstrates the outstanding effect like the next.

[0031](1) Since the feature of a specific image can be registered, a copy can be forbidden by registering on the occasion of issue of a new bill, and a forged prohibition function improves.

[Translation done.]